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Amdt. dated May 9, 2005
Reply to Office Action of January 25, 2005

This listing of claims will replace all prior versions, and listings, of claims in the application:

<u>Listing of Claims:</u>

Claim 1 (Currently Amended):   A computer-assisted diagnosis method for assisting diagnosis of three-dimensional digital <u>medical</u> image data, comprising the steps of:

identifying three-dimensional <u>anatomical</u> objects within the three-dimensional <u>medical</u> image data;

for a given three-dimensional <u>anatomical</u> object:

determining a local spinning plane for the given <u>anatomical</u> object, the local spinning plane being centered at a centroid and a local spinning axis of the given <u>anatomical</u> object;

rotating the local spinning plane at least a portion of 360 degrees; and

<u>automatically</u> creating a view of the given <u>anatomical</u> object at <u>computer selected</u> ~~predefined~~ increments of rotation, so as to result in a plurality of views of the given <u>anatomical</u> object at predefined angles in the rotation that are displayed in sequence as a cine loop.

Claim 2 (Currently Amended):   A computer-assisted diagnosis method for assisting diagnosis of three-dimensional digital <u>medical</u> image data, comprising the steps of:

receiving indicia identifying at least one region of interest in a digital medical image; and

identifying three-dimensional <u>anatomical</u> objects within the at least one region of interest;

for a given three-dimensional <u>anatomical</u> object within the at least one region <u>performing the following computer-implemented steps</u>:

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determining an extent, a centroid, and a local spinning axis of the
given anatomical object;

determining a local spinning plane for the given anatomical
object, the local spinning plane being centered at the centroid and the local
spinning axis;

rotating the local spinning plane at least a portion of 360
degrees, wherein said rotating step comprises the step of:

automatically creating a view of the given anatomical object at
predefined computer selected increments of rotation, so as to result in a plurality
of views of the given anatomical object at predefined angles in the rotation that
are displayed in sequence as a cine loop.

Claim 3 (Currently Amended):   The method according to claim 2, wherein
said step of determining the extent of the given anatomical object comprises the
step of examining connected voxels within a predefined volume on adjacent
tomographic slices .

Claim 4 (Currently Amended):   The method according to claim 2, wherein
the local spinning plane is initially oriented at a same angle as a current two-
dimensional view of the three-dimensional digital medical image data.

Claim 5 (Currently Amended):   The method according to claim 2, wherein
said step of providing the plurality of views of the given anatomical object further
comprises the step of providing a plurality of views of areas surrounding the
given anatomical object.

Claim 6 (Original):   The method according to claim 2, wherein the indicia is
provided from a user through one of a mouse and an eye tracking device.

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Claim 7 (Currently Amended):   The method according to claim 2, wherein said providing step further comprises the step of determining at least one of a volume, a geometrical location, and a center of mass of the given <u>anatomical</u> object.

Claim 8 (Currently Amended):   The method according to claim 2, wherein said providing step further comprises the step of determining one of a circularity and a sphericity of the given <u>anatomical</u> object.

Claim 9 (Currently Amended):   The method according to claim 2, wherein said providing step further comprises the step of determining a mean, a variance, and a min/max of intensity values within the given <u>anatomical</u> object.

Claim 10 (Original):   The method according to claim 2, wherein said providing step further comprises the step of determining a texture, a surface smoothness, and regularity measures of the given object.

Claim 11 (Currently Amended):   The method according to claim 2, wherein said providing step further comprises the step of determining two-dimensional and three-dimensional shape measures of the given <u>anatomical</u> object.

Claim 12 (Original):   The method according to claim 2, further comprising the step of storing results from said providing step in a table for comparison with at least one of preceding or succeeding scans of a same patient.

Claim 13 (Currently Amended):   The method according to claim 12, further comprising the step of storing a confidence value in the table that indicates an estimate of a clinical relevance of the given <u>anatomical</u> object.

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Claim 14 (Currently Amended):   The method according to claim 2, further
comprising the steps of:

    setting thresholds for particular features of particular <u>anatomical</u> objects
that represent whether the particular <u>anatomical</u> objects are abnormal; and

    identifying a given <u>anatomical</u> object that exceeds a given threshold.

Claim 15 (Currently Amended):   A program storage device readable by
machine, tangibly embodying a program of instructions executable by the
machine to perform steps for computer-assisted diagnosis of three-dimensional
digital <u>medical</u> image data, said method steps comprising:

    receiving indicia identifying at least one region of interest in a digital
medical image; and

    identifying three-dimensional <u>anatomical</u> objects within the at least one
region of interest;

    for a given three-dimensional <u>anatomical</u> object within the at least one
region <u>performing the following computer implemented steps</u>:

    determining an extent, a centroid, and a local spinning axis of the given
<u>anatomical</u> object;

    determining a local spinning plane for the given <u>anatomical</u> object, the
local spinning plane being centered at the centroid and the local spinning axis;

    rotating the local spinning plane at least a portion of 360 degrees,
wherein said rotating step comprises the step of:

    <u>automatically</u> creating a view of the given <u>anatomical</u> object at
~~predefined~~ <u>computer selected</u> increments of rotation, so as to result in a plurality
of views of the given <u>anatomical</u> object at predefined angles in the rotation that
are displayed in sequence as a cine loop.

Claim 16 (Currently Amended):   The program storage device according to
claim 15, wherein said step of determining the extent of the given <u>anatomical</u>

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object comprises the step of examining connected voxels within a predefined volume on adjacent tomographic slices .

Claim 17 (Currently Amended):   The program storage device according to claim 15, wherein the local spinning plane is initially oriented at a same angle as a current two-dimensional view of the three-dimensional digital medical image data.

Claim 18 (Currently Amended):   The program storage device according to claim 15, wherein said step of providing the plurality of views of the given anatomical object further comprises the step of providing a plurality of views of areas surrounding the given anatomical object.

Claim 19 (Original):   The program storage device according to claim 16, wherein the indicia is provided from a user through one of a mouse and an eye tracking device.

Claim 20 (Currently Amended):   The program storage device according to claim 15, wherein said providing step further comprises the step of determining at least one of a volume, a geometrical location, and a center of mass of the given anatomical object.

Claim 21 (Currently Amended):   The program storage device according to claim 15, wherein said providing step further comprises the step of determining one of a circularity and a sphericity of the given anatomical object.

Claim 22 (Currently Amended):   The program storage device according to claim 15, wherein said providing step further comprises the step of determining a

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mean, a variance, and a min/max of intensity values within the given <u>anatomical</u>
object.

Claim 23 (Currently Amended):   The program storage device according to
claim 15, wherein said providing step further comprises the step of determining a
texture, a surface smoothness, and regularity measures of the given <u>anatomical</u>
object.

Claim 24 (Currently Amended):   The program storage device according to
claim 15, wherein said providing step further comprises the step of determining
two-dimensional and three-dimensional shape measures of the given <u>anatomical</u>
object.

Claim 25 (Original):   The program storage device according to claim 15, further
comprising the step of storing results from said providing step in a table for
comparison with at least one of preceding or succeeding scans of a same
patient.

Claim 26 (Currently Amended):   The program storage device according to
claim 25, further comprising the step of storing a confidence value in the table
that indicates an estimate of a clinical relevance of the given <u>anatomical</u> object.

Claim 27 (Currently Amended):   The program storage device according to
claim 15, further comprising the steps of:
        setting thresholds for particular features of particular <u>anatomical</u> objects
that represent whether the particular <u>anatomical</u> objects are abnormal; and
            identifying a given <u>anatomical</u> object that exceeds a given threshold.

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